Appendix H
Future Technical Architecture – Alternative 2

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A. Introduction

Alternative 2 is defined as providing the computer support necessary for the implementation of the CSR/CB human resource business rules to be implemented for the 2003-05 biennium through replacement of existing human resource information systems currently operated by HRISD with a vendor supplied "packaged" solution. The Future Technical Architecture provides a conceptual design for meeting that objective, as well as estimated related costs.

The Future Technical Architecture has been developed without respect to a specific Enterprise Application System (EAS) Human Resource Management System (HRMS) package; instead, it has been developed at a high level and provides the foundation for a more detailed architecture for a baseline implementation of any of the Tier-One EAS HRMS packages.

B. Components

The components of the Future Technical Architecture for Alternative 2 are listed below:

- Requirements Gap Analysis
- Conceptual System Design
- Technical Component Requirements
- Organizational Impact
- Estimated Schedule
- Estimated Costs

C. Information Sources

In addition to information already accumulated during the Feasibility Study, information specific to the Future Technical Architecture for Alternative 2 was gathered from the following sources:

- Interviews with DOP, HRISD, and DIS managers and staff.
- HRISD system documentation archives.

- DOP and HRISD CSR/CB work-in-progress documentation.
- Hardware sizing data supplied by the IBM Competency Centers.
- IBM Intellectual Capital gathered from numerous EAS engagements.

II. Requirements Gap Analysis

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A. Approach

Business requirements related to the HRISD Personnel, Leave, and Payroll information systems to support CSR/CB were identified in focus group sessions with state employees during the needs assessment portion of the feasibility study. Each requirement identified was given a rating of High (must have), Medium (desired enhancement), or Low (nice to have). Ratings by HRISD system are quantified in Exhibit II-1.

Exhibit II-1: Requirement Ratings by HRISD System

Rating	Personnel	Leave	Payroll	Total
High	159	37	96	292
Medium	13	2	13	28
Low	19	1	1	21
Total:				341

After the requirements were identified and rated, the DOP reviewed the results and determined that 133 of the 341 requirements were necessary for implementation for the 2003-05 biennium. All 133 were rated High.

Since packaged software cannot easily be implemented to meet specific requirements, it was decided to compare *all* Personnel, Leave, and Payroll requirements rated High or "must have" with the capabilities of Tier-One 'generic' EAS HRMS applications (as opposed to a specific EAS HRMS package).

B. Analysis Results

When the requirements were compared to generic EAS, it appeared that most of the requirements could be met with "out of the box" functionality. 130 of the 133 requirements necessary for the 2003-05 implementation of CSR/CB were met, as were 152 of the remaining 159 requirements rated High.

The small percentage of requirements that may not be met with "out of the box" functionality appear to be possible through some fairly minor modifications and work-arounds, none of which should be considered major "customizations" that would impact future upgrades.

In addition, there do not appear to be any gaps in reporting tools or other development tools that would be required as these are delivered standard in Tier-One EAS HRMS packages.

The State will need to perform a more detailed gap analysis after the State's CSR/CB business requirements are finalized.

C. Gap Analysis Matrix

Exhibit II-2 contains the Gap Analysis Matrix illustrating the results of the requirements gap analysis. It contains the 292 requirements rated High. For ease of comparison, each requirement is identified with the same numbering schema as the overall needs assessment Requirements Matrix located in Appendix E.

The two columns on the right divide the requirements between those necessary for the 2003-05 biennium implementation and those necessary for the 2005-07 biennium implementation. A "Y" indicates the requirement is fully supported, an "N" indicates it is not. Upon implementation of a generic EAS solution, it is expected that requirements with a "Y" in either column will be immediately supported.

Exhibit II-2: Gap Analysis Matrix

#		Requirements	2003-05	2005-07
High Priority Requirements – Personnel				
	1.1.0 Manage Human Resources			
1	1	Ability to provide for the current employee self-service capabilities existing in State agencies.		Y
2	2	Ability to provide for current manager self-service capabilities existing in State agencies.		Y
3	3	Ability to support Centralized/Decentralized Human Resources.	Y	
		Ability to capture by effective date:		
4	4	Personal data (name, address, etc.).	Y	
5	5	Emergency contact, medical information, handicap, etc.		Y
6	6	Work history at current and prior agencies (within State government).	Y	
7	7	Current & previous supervisors.		Y
8	8	Education, training, national certifications, licensure (w/ expiration dates).	Y	
9	9	Job classifications.	Y	
10	10	Employment categories (entry level, supervisory, front line, etc.)	Y	
11	11	Salary history.	Y	
12	12	Security clearances.		Y

#	Requirements		2003-05	2005-07
13	13	Veteran status.		Y
14	14	Memo/Comment fields.		Y
15	15	Disciplinary actions.	Y	
16	16	Languages spoken in addition to English.		Y
17	17	Bargaining unit.	Y	
18	18	Master contract.	Y	
19	19	Employee Status (Seasonal, temp, FT, PT, volunteer, intern, apprentice, in-training)	Y	
20	20	Business unit.	Y	
21	21	Agency-defined fields.		Y
22	22	Employee skills inventory.		Y
23	23	Seniority information.	Y	
24	24	Leaves of absence.		Y
25	25	Reasons for termination.	Y	
26	26	Termination dates.	Y	
27	27	Ability to system-generate a universal employee identification number.	Y	
28	28	Ability to check for duplicate Social Security numbers.	Y	
29	29	Ability to Quick Hire & Terminate (e.g., seasonal firefighters).	Y	
30	30	Ability to track temporary employees nearing certain hours thresholds.	Y	
31	31	Ability to accrue seniority by hours or by dates.	Y	
32	32	Ability to track breaks in service and considers this in calculating years of service.		Y
33	33	Ability to track initial, lateral transfer, and promotional probationary period.	Y	
34	34	Ability to track multiple probationary periods (trial service periods).	Y	
35	35	Ability to transfer an employee to a new location without terminating and rehiring and maintain all history.	Y	
36	36	Ability to track actual physical work location of employees (geographic location).	Y	
37	37	Ability to handle limited term assignments or temporary promotions.	Y	
38	38	Ability to associate employees to multiple locations/agencies.		Y
39	39	Ability to maintain history for a significant number of years (>25) to allow checking for leaves of absence, reasons for termination, termination dates, etc.	Y	
	1.2.0 Perform Organization and Staffing Analysis			
		Ability to provide for the definition of position characteristics such as:		
40	1	Organization.	Y	

#	Requirements		2003-05	2005-07
41	2	Location (geographic location).	Y	
42	3	Job code and title.	Y	
43	4	Shift and work days.	Y	
44	5	Expenditures and related budget information.	Y	
45	6	Status.	Y	
46	7	Retirement eligible.	Y	
47	8	Position evaluation points (e.g., For allocating various positions to certain salary bands).	Y	
48	9	Assignment Pay.	Y	
49	10	Dual language.	Y	
50	11	Selectives.	Y	
51	12	Essential functions.		Y
52	13	Ability to determine qualifications at the Position/Classification Level.		Y
53	14	Ability to support position banding including range/step data if fields populated.	Y	
54	15	Ability to support position versus job classifications.	Y	
55	16	Ability to support position grades and steps.	Y	
56	17	Ability to track salary ranges, grades, and steps by effective date.	Y	
57	18	Ability to allow for the use of unique position code assignment to each employee.	Y	
58	19	Ability to create work force composition reports.	Y	
59	20	Ability to establish low/high and median salary scales.	Y	
60	21	Ability to maintain budgeted FTEs as well as salary amounts, and calculate variances.	Y	
61	22	Ability to track funding source to position funded.	Y	
62	23	Ability to track both funded and unfunded vacancies.	Y	
63	24	Ability to plan and forecast human resource requirements.	Y	
64	25	Ability to forecast eligible retirees, based on bargaining unit category, age, years of service, and retirement plan (Part of workforce composition reports).	Y	
65	26	Ability to track employee turnover by department, classification, ethnicity, gender, geographic location, etc. (Part of workforce composition reports).	Y	
66	27	Ability to track open positions and time to fill by department.		Y

#	Requirements		2003-05	2005-07
	1.3.0 Complete Position Classification			
67	1	Ability to allow mass updates to job descriptions.		Y
68	2	Ability to accommodate job sharing.		Y
69	3	Ability to double and triple fill positions and track.	Y	
70	4	Ability to track and report on over and underfilled positions.	Y	
71	5	Ability to accommodate employees who work in multiple positions at the same time.	Y	
72	6	Ability to support standardized competencies.		Y
73	7	Ability to support job roles and skill requirements.		Y
	1.4.0 Manage Employee Performance			
74	1	Ability to support performance reviews.	Y	
75	2	Ability to support notification that employee reviews are due.	Y	
76	3	Ability to track completion rates of employee reviews.	Y	
77	4	Ability to track performance ratings by demographics, departments, age, division, etc.	Y	
78	5	Ability to capture employee performance appraisal history.	Y	
79	6	Ability to track merit increase (%) by organization, fund, etc.	Y	
		Ability to track disciplinary actions:		
80	7	Maintaining history of the actions.	Y	
81	8	Monitoring outcome of the actions.		Y
82	9	Tracking involvement in sexual harassment or discrimination suits.		Y
83	10	Tracking the consistency of actions and/or reactions.		Y
84	11	Ability to establish and monitor performance plans (last chance agreements).		Y
		Ability to provide employment activity analysis reports for the following:		
85	12	Promotions.	Y	
86	13	Terminations.	Y	
87	14	Layoffs and recalls.	Y	
88	15	New hires.	Y	
89	16	Lateral Transfers.	Y	
	1.5.0 Compensate, Recognize and Reward Employees			
90	1	Ability to track and acknowledge service, including retirements, and provide different programs per department.		Y
91	2	Ability to track an anniversary date that may be hire date, re-hire date or last promotion date.		Y

#	Requirements		2003-05	2005-07
92	3	Ability to add additional seniority time for employees who have worked for other covered jurisdictions (City of Olympia, Thurston County, etc.).	Y	
93	4	Ability to reward attendance, safe driving, etc. (Monetary).	Y	
94	5	Ability to build business rules based on initial salary over designated amount (assignment pay).	Y	
95	6	Ability to support Performance Incentive Pay.	Y	
96	7	Ability to support Interim Assignment Pay.	Y	
97	8	Ability to support various levels of pay & pay scales within the same job class.	Y	
98	9	Ability to support "Y-Rates" (i.e., an employee is paid above the maximum salary in a classification and may be exempt or receive different amounts from COLAs, etc.).	Y	
99	10	Ability to support business rules for calculating compensation such as apprentices receiving a percentage of the normal salary for a classification or volunteers receiving no salary and only the state portion of the L & I premium paid.	Y	
100	11	Ability to store history information for both Performance Incentive Pay and Interim Assignment Pay to track total paid by department, year, etc.	Y	
101	12	Ability to support 'what if' salary scenarios such as cost of living increases, etc.	Y	
102	13	Ability to provide additional compensation for positions requiring special skills.	Y	
103	14	Ability to support geographic/regional pay and special pay.	Y	
104	15	Ability to support lump sum bonus payments to retain personnel, meet market conditions, etc.	Y	
105	16	Ability to support automatic periodic increments by percentage or range in and step.	Y	
	1.6.0 Manage Employee Relations			
106	1	Ability to support a multi-tier grievance system.		Y
107	2	Ability to provide notification of expiring grievance timelines.		N
108	3	Ability to capture employee grievances and appeals by type.		Y
109	4	Ability to support multi-tier discipline system.		Y
110	5	Ability to track concurrent grievances for same employee.		Y
111	6	Ability to track complaints filed externally, i.e., EEOC, DOL, ADA, Human Rights Commission.		Y
112	7	Ability to support layoffs/RIFs considering various criteria.	Y	
113	8	Ability to maintain and report on recall lists.	Y	
114	9	Ability to support different types of separation packages.		Y

#	Requirements		2003-05	2005-07
115	10	Ability to support termination of benefits and notify Health Care Authority & Retirement Systems of separation.	Y	
116	11	Ability to track separation reasons by employee type, department, or other organizational entity.	Y	
117	12	Ability to log, track, and develop reports for Arbitration's and Mediations.		Y
118	13	Ability to maintain workforce reports by name, gender, ethnicity, classification, date of birth, salary, hire date, etc.	Y	
119	14	Ability to maintain and report on employee seniority.	Y	
120	15	Ability to maintain layoff lists by employee, seniority, etc.	Y	
121	16	Ability to maintain assignment and transfer lists.		Y
122	17	Ability to have registers/lists updated by actions keyed in the appointment side of the system, i.e., when candidate is appointed in personnel/payroll system, candidate's name is removed from register/list.		N
	1.7.0 Manage Labor Relations			
123	1	Ability to capture employee grievances and appeals by type.		Y
124	2	Ability to support multi-tier discipline system (e.g., progressive discipline and support consistent application).		Y
125	3	Ability to track complaints filed externally, i.e., EEOC, DOL, Human Rights Commission, ADA discrimination.		Y
126	4	Ability to maintain and report on bumping lists.	Y	
127	5	Ability to maintain and report on recall list (RIF register).	Y	
128	6	Ability to support layoffs/RIF's considering various criteria (i.e., performance, seniority).	Y	
129	7	Ability to support termination of benefits and notify insurance carriers of separation.	Y	
130	8	Ability to log, track, and develop reports for Arbitrations.		Y
131	9	Ability to log and track multi-tier inter- and intra-agency Memos of Understanding (work rules) contract issues.		Y
		Ability to maintain workforce reports by:		
132	10	Name.	Y	
133	11	Gender.	Y	
134	12	Ethnicity.	Y	
135	13	Classification.	Y	
136	14	Date of Birth.	Y	
137	15	Salary (Range Equivalency, Placement, Exact Dollar Amount).	Y	
138	16	Budget Unit (Account Code).	Y	

#	Requirements		2003-05	2005-07
139	17	Bargaining Unit (Agency, Division, Program, Work Unit, Location, Which members are paying dues).	Y	
140	18	Hire Date	Y	
141	19	Status (Permanent or Temp).	Y	
142	20	Agency Continuous Service Credit.		Y
143	21	Time in Grade.		Y
144	22	Bargaining Unit Time Credit.		Y
145	23	Lay-off Units (Geographic Bumping).		Y
		Ability to attach employee organization and/or union membership to an employee at:		
146	24	Master Agreement Level.	Y	
147	25	Bargaining Unit Level.	Y	
148	26	Business Unit (applicable for contracting out).	Y	
149	27	Ability to track if employee has been advised of union shop requirements.		Y
150	28	Ability to track time used for union business.		Y
151	29	Ability to track employees who are on a leave of absence for union business.		Y
152	30	Ability to support bargaining unit contract administration.		Y
153	31	Ability to deduct union dues (as well as a variety of voluntary deductions).		Y
154	32	Ability to transmit dues and agency fees to certified agent.	Y	
155	33	Ability to notify employee of non-payment (of dues).		Y
156	34	Ability to furnish transaction reports to union on number of employees in unit, etc.	Y	
157	35	Ability to maintain and report on employee seniority.	Y	
158	36	Ability to maintain assignment and transfer lists.		Y
159	37	Ability to generate bargaining unit contract reviews via business rules.		Y
High Priority Requirements – Leave				
	2.1.0 Manage Paid Time-Off			
160	1	Ability to track leave balances and warn if balance is insufficient for time entered.		Y
161	2	Ability to provide employee online information for vacation and leave of absence (including expirations).		Y
162	3	Ability to identify and track absence trends by employee.		Y

#	Requirements		2003-05	2005-07
163	4	Ability to capture and track multiple leave types (including jury, election, religious, military, bereavement, disaster, volunteer activities, paid and unpaid sabbaticals, personal holidays, educational, administrative, suspensions, etc.).	Y	
164	5	Ability to add new leave types and define how they are used.	Y	
165	6	Ability to support donation of vacation leave, sick leave, and personal holidays to a pool.		N
166	7	Ability to track pool balance.		N
167	8	Ability to support donation of vacation leave, sick leave, and personal holidays to an individual	N	
168	9	Ability to track the donation of leave to an individual and also track allowable maximums that can be received.	N	
169	10	Ability to manage sick leave buyout program on an annual basis and at retirement (at varying buyout rates).		N
170	11	Ability to accrue sick leave time based on straight time paid bi-weekly, weekly.	Y	
171	12	Ability to accrue sick leave time based on work status, hours worked, years of service and eligibility.	Y	
172	13	Ability to accrue vacation leave time based on work status and years of service.	Y	
173	14	Ability to track vacation maximums and hours lost.	Y	
174	15	Ability to allow excess annual leave to accrue until employee anniversary date.	Y	
175	16	Ability to allow excess annual leave to accrue for a period of time (as approved) and this balance kept separate to be used first when leave is then taken.	Y	
176	17	Ability to track holidays taken (Some holidays may not be taken on the actual date of the holiday).		Y
177	18	Ability to accrue personal holidays based on a variety of criteria.	Y	
178	19	Ability to track comp time earned, taken, and balance.	Y	
179	20	Ability to track comp time expiration based on periods.	Y	
180	21	Ability to pay out comp time balances.	Y	
181	22	Ability to convert leave from one type to another.	Y	
182	23	Ability to convert leave to cash on a yearly basis, at termination or at retirement.	Y	

#	Requirements		2003-05	2005-07
183	24	Ability to support annual leave cash-outs that may or may not be subject to retirement.	Y	
184	25	Ability to track Voluntary Employee Benefit Accounts (VEBA) related to retirees' ability to receive accrued vacation and sick leave upon retirement in a manner that is tax advantageous to the employee.		Y
185	26	Ability to assign specific employees and/or positions with a VEBA unit.		Y
186	27	Ability to track exchange time for exempt employees		N
	2.2.0 Manage Leave Without Pay			
187	1	Ability to track leave without pay.	Y	
188	2	Ability to track the impact of unpaid leave on seniority.	Y	
189	3	Ability to recognize when a Leave of Absence (LOA) status goes from paid to unpaid.		Y
190	4	Ability to track unauthorized absences (unauthorized leave without pay).		Y
191	5	Ability to manage Family Medical Leave Act (FMLA) application process and approval.		Y
192	6	Ability to track FMLA used.	Y	
193	7	Ability to track FMLA taken by spouses that are also State employees.	Y	
194	8	Ability to establish different criteria for payment of FMLA from different leave plans, i.e., exhaust sick leave first.		Y
195	9	Ability to track concurrent FMLA leaves.	Y	
196	10	Ability to track benefits while on FMLA leave.		Y
High Priority Requirements – Payroll				
	3.1.0 Manage Time and Attendance Collection			
197	1	Ability to support an on-line time entry worksheet for hours and/or exceptions.		Y
198	2	Ability to perform decentralized time and labor entry.	Y	
199	3	Ability to support cost accounting, labor distribution, etc.	Y	
		Ability to support the following:		
200	4	Negative hours (payroll corrections).		Y
201	5	Reporting unpaid hours i.e., personal time off.		Y
202	6	Automatic paying of employee without time entry.	Y	
203	7	Each location/agency having their own frequencies of time entry.		Y
204	8	Ability to provide multiple levels of online time approval.		Y

#	Requirements		2003-05	2005-07
205	9	Ability to specify multiple holiday schedules that drive payment of appropriate holiday pay based on the employee's holiday schedule.	Y	
206	10	Ability to support multiple calendars, work types (e.g., telecommuting, comp time, overtime), projects and work schedules.	N	
207	11	Ability to support on-call pay.	Y	
208	12	Ability to track which shift worked.	Y	
209	13	Ability to support continuous 24X7 schedules.	Y	
210	14	Ability to support telecommuting.	Y	
211	15	Ability to support flexible work schedules.	Y	
212	16	Ability to provide edits against the work schedule. i.e., vacation may not be entered on scheduled day off.		Y
	3.2.0 Perform Calculations and Disbursements			
213	1	Ability to support multiple pay cycles.	Y	
214	2	Ability to accommodate weekly, bi-weekly, semi-monthly, and special payroll runs.	Y	
215	3	Ability to define multiple work weeks and calculate overtime accordingly.	Y	
216	4	Ability to support different lags in pay periods (i.e., salaried employees are not on a lag, but hourly employees are on a lag).		Y
217	5	Ability to allow benefit deductions to go into arrears and track limits on payback.		Y
218	6	Ability to allow voluntary deductions that are a percentage of an employee's base pay or other bases (up to a maximum).	Y	
219	7	Ability to allow voluntary deductions that are a flat amount.	Y	
220	8	Ability to automatically discontinue a deduction when a specific limit is reached.	Y	
221	9	Ability to allow the refunding of deductions and the calculations of applicable tax adjustments.	Y	
222	10	Ability to choose and change the priority order of taking deductions in case there is not enough to take a given deduction.	Y	
223	11	Ability to deduct or not deduct any given deduction on a special payroll on an employer or employee basis.	Y	
224	12	Ability to process one-time deductions.	Y	
225	13	Ability to process deductions on a specified schedule rather than every pay cycle, i.e., United Way made only on the second pay period of the month.	Y	

#	Requirements		2003-05	2005-07
226	14	Ability to specify start and end dates for any deduction.	Y	
227	15	Ability to electronically transmit deductions to appropriate agencies/vendors.	Y	
228	16	Ability to allow maximum dollar amounts or percentage of gross maximum to be set for each deduction to be used to calculate benefits, i.e., pension, 457 limits.		Y
229	17	Ability to support the State of WA Retirement plans reporting related to the payment of compensation.	Y	
230	18	Ability to define frequency codes which pertain to each deduction type code.	Y	
231	19	Ability to allow for accurately handling Section 125 deductions / plans.	Y	
232	20	Ability for each deduction to have its own taxing options.		Y
233	21	Ability to allow for deductions to be overridden.		Y
234	22	Ability to automatically stop pay when an employee is inactive or separated.	Y	
235	23	Ability to track claim information and perform calculations automatically for garnishments, tax levies, child support, etc.		Y
236	24	Ability to handle all levels of garnishments: flat amounts; percentages; disposable income percentages; graduated percentages based on different base levels; guaranteed net.		Y
237	25	Ability to handle multiple garnishments per employee.		Y
238	26	Ability to do payroll accruals monthly, quarterly, annually.		Y
239	27	Ability to process and calculate retro pay.	Y	
240	28	Ability to calculate shift pay based on employee's base pay or other criteria.	Y	
241	29	Ability to support payment of employee allowances for taxable items (i.e., car, clothing, etc.)	Y	
242	30	Ability to track multiple pay types (regular, overtime, supplemental).	Y	
243	31	Ability to add new pay types and define how they are used.	Y	
244	32	Ability for normal pay, taxes, deductions and age history restart when an employee is rehired during the same tax year.		Y
245	33	Ability for calculations to include mid-period hires, rate changes, transfers, and termination.		Y
246	34	Ability to prorate charges within pay periods to appropriate fund.		Y

#		Requirements	2003-05	2005-07
247	35	Ability to pay shift premiums based on the actual times worked, i.e., a 6 p.m. to 3 a.m. shift includes two shift premium levels.	Y	
248	36	Ability to allow 1.0, 1.5, 2.0, etc. overtime pay.	Y	
249	37	Ability to allow the Payroll process to be driven by an on-line calendar.		N
250	38	Ability to provide a means of establishing pay periods in advance.		Y
251	39	Ability to provide a holiday schedule that will automatically pay holiday pay to eligible employees.	Y	
		Ability to support federal income tax calculation per combinations of the following methods:		
252	40	Exemption method.	Y	
253	41	Percentage of gross.	Y	
254	42	Specific dollar amount.	Y	
255	43	Not subject (exempt).	Y	
256	44	Supplemental method.		Y
257	45	Earned Income Credit.		Y
258	46	Ability to support compliance with all federal and state legislation for imputed income (taxable fringe benefits).	Y	
259	47	Ability to provide a gross-up calculation routine. (e.g., grievance award).	Y	
260	48	Ability to provide grossed up amounts to be displayed on the employee's earning statement showing gross, taxes, and net with a description.	Y	
261	49	Ability to produce checks on demand.	Y	
262	50	Ability to recognize when an LOA status goes from paid to unpaid.		Y
263	51	Ability to produce a single check for employees who work in multiple positions in multiple locations during a pay period (while correctly processing all deductions, premium pay types, etc.).		Y
264	52	Ability to provide for employer matching contributions.	Y	
265	53	Ability to support allowances and appropriate taxing options (e.g., Uniform allowance).	Y	
266	54	Ability to support mass updates (i.e., COLAs).	Y	
267	55	Ability to run pre-balance reports prior to running payroll.	Y	
268	56	Ability to produce reports for 941 reporting.		Y
269	57	Ability to automate all W-2 reporting.		Y
270	58	Ability to produce on-demand W-2 reports.		Y

#	Requirements		2003-05	2005-07
271	59	Ability to add year-to-date fields for W-2's.	Y	
272	60	Ability for an employee to receive both a 1099 and a W-2.	Y	
273	61	Ability to support multiple outbound ACH transmissions to different destination financial institutions for the same payroll period.		Y
274	62	Ability to support automatic ACH reversal processing.	Y	
275	63	Ability to provide additional ACH addenda records to vendors.		Y
276	64	Ability to support automatic pre-note notification.	Y	
277	65	Ability to support warrant cancellations.	Y	
278	66	Ability to print comments on pay stubs.	Y	
279	67	Ability to allow State contributions to health, deferred compensation, and other deductions to be computed as either a flat rate, a percentage of gross, or a percentage of employee contributions.	Y	
280	68	Ability to allow employees to catch up on their retirement contribution by allowing them to deduct over the limit.	Y	
281	69	Ability to continue benefits while employee on leave.		Y
282	70	Ability to support self-pay of benefits for various reasons.	Y	
283	71	Ability to support tuition reimbursement processing.		Y
284	72	Ability to support FLSA calculations and non-FLSA calculations	Y	
285	73	Ability to journal Payroll information to AFRS and other accounting systems.	Y	
286	74	Ability to tie payment of OT to appropriate FLSA categorization and calculation.	Y	
287	75	Ability to calculate medical aid (industrial insurance) on an actual hours worked basis and by exception.		Y
288	76	Ability to factor in Workers' Compensation (WC) pay into partial worked days.		Y
289	77	Ability to calculate benefits while employee is on WC leave.		Y
290	78	Ability to calculate salary amount for employee on WC leave to make their pay 100%.		Y
291	79	Ability to track benefit deductions that go into arrears while on WC leave.		Y
292	80	Ability for system to notify payroll if employee on WC leave requires a garnishment.		Y

III. Conceptual System Design

■

A. Application Infrastructure

1. Overview

An EAS HRMS is a suite of integrated software applications that perform a broad range of functions. Generally speaking, an EAS HRMS consists of the functions listed below:

a. Human Resources

- Organizational development
- Compensation
- Incentive management
- Information collaboration

b. Personnel

- Training and employee development
- E-recruiting
- Training and employee development
- Performance management
- Resume processing

c. Benefits

- Flexible spending accounts administration
- Employee benefits enrollment
- COBRA and retiree benefit tracking
- Maintenance of benefit plans

d. Payroll

- E-Pay
- Time and labor

- Attendance management
- Legal reporting

e. Employee and Manager Self Service

f. Workforce Analytics

- Work-force cost planning and simulation
- Work-force management
- Balanced scorecard

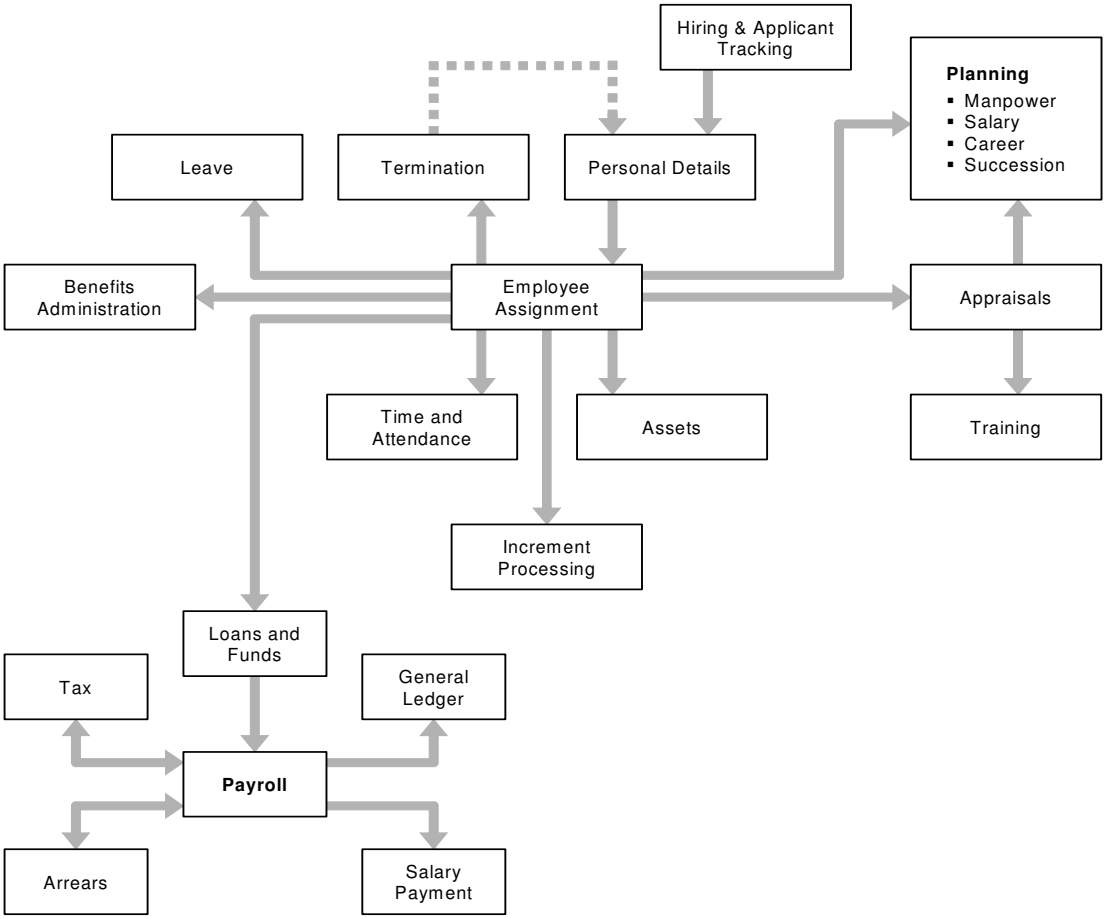
The benefit of integrated EAS software is that it is designed to work together seamlessly to efficiently collect information and store it in a common database. This common database is a one-source storehouse of information that is accessed by other software components that need the human resource information.

Data need only be entered or updated once, reducing errors and generating information for time and labor reports, analysis, planning, and program management. Ultimately, efforts and costs are shifted to innovation, problem solving and direct service to customers rather than inputting, processing, organizing, verifying and related "busy work" that costs both time and money.

2. Integrated Functionality

Exhibit III-1 on the following page depicts the integration of typical EAS HRMS functionalities.

Exhibit III-1: EAS HRMS Application Architecture



The expected result of integration is data integrity; the data is entered once, stored, and used to provide the same accurate data no matter how many processes access the database. For instance, an employee's name, address, position, and job information is entered into the human resource modules of the system and is picked up by the payroll-processing module with precision. The financial detailed results of the payroll processing are then exported from payroll to the financial system's general ledger and interfaces send the applicable information to the State Treasurer and Office of Financial Management. Additional interfaces send the information off in the appropriate formats to several external agencies' systems, such as Department of Retirement, Health Care Authority, customer agency systems, credit unions, banks, and labor unions.

Another process will pick up that same employee and position information and note that the incumbent has a separation date in the near future, send a reminder to the hiring authority, and allow a vacant position recruitment requisition to be processed through the intranet for electronic approval. Upon approval, the recruitment module picks up the information and begins the recruitment and hiring process to fill the position by the requested date. When a new employee is hired, the recruitment module

will pass the information to the personnel module and the cycle begins again. This is a 'best practices' integrated system with all components working together for accurate flow of data and processing.

3. Phase I: 2003-05 Biennium Implementation

To minimize risk and organizational impact, the State of Washington prefers to take an incremental approach to EAS HRMS implementation. However, because of the integrated nature of an EAS HRMS, it is necessary to implement at least base functionality in each of these functional areas: Human Resources, Personnel, Benefits Administration and Payroll. It is recommended that Washington State include the following functionality in their initial implementation effort:

- Security
- Reporting
- Company Structure
- Job Structure
- Employee Groups
- Position Control
- Staffing Requirements
- Employee Positions
- Performance Reviews
- Personnel Actions
- Employee History
- Wage Analysis
- EEO Reporting
- Contract Tracking
- Attendance Management
- Deductions
- Garnishments
- Workers' Compensation
- Funding Sources
- Payroll Distributions
- Deposit Distributions

- Interface for time and labor information from HRISD Payroll System or implementation of Time and Labor.
- Payment Creation
- Adjustments
- Payment Modeling
- Bank Reconciliation
- Third Party Government Payment Processing
- Interface from HRISD Benefits System for Payroll deductions or implementation of base Benefits Administration which would include Benefit Plan setup and maintenance.
- Maintenance of Employee Records
- Employee Enrollment
- COBRA and Retiree Tracking and Enrollment

It is understood that collective bargaining agreements will not become effective until six months after Phase I has been configured and "go-live" has been accomplished on January 1, 2005. Consequently, the integrator will work with the State to configure the EAS HRMS application for the new collective bargaining requirements. It is not expected that this effort will be significant. The configuration and subsequent migration of employees to their new collective bargaining status will be accomplished as part of the post-implementation efforts for Phase I and the configuration portion of Phase II.

4. Phase II: 2005-07 Biennium Implementation

The following enhanced functionalities are suggested for deployment to a limited number of "early adopter" agencies for the 2005-07 biennium and will provide further HRMS efficiencies:

- Employee and Manager Self-Service
- Workforce Analytics
- Performance Management
- e-Recruiting
- Training
- Approval and Notification Workflows

5. Phase III – 2005-07 Biennium

Deployment of the enhanced functionalities as detailed above in Phase II, is suggested for those agencies not included in the Phase II deployment. It is also suggested that this phase have limited support from the external integrator and that the State resources lead this phase.

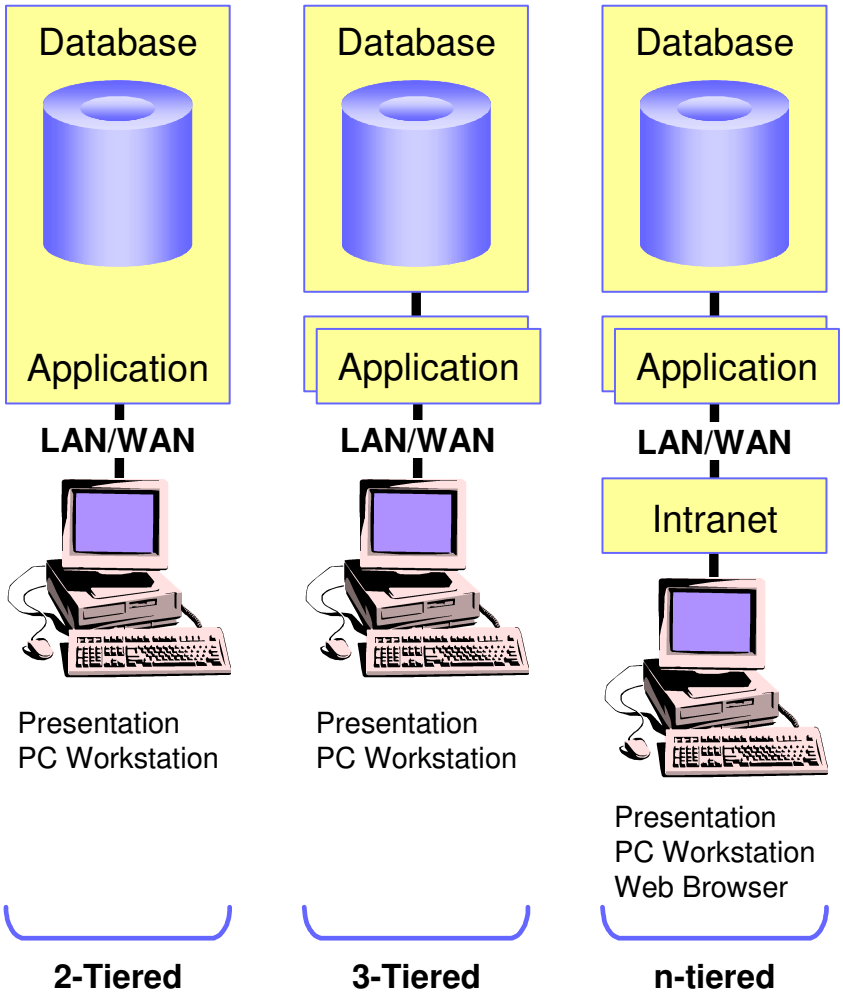
Once the State has selected a specific software package, the suggested functionalities and implementation phasing will need to be revisited since each software package may require slightly different implementation phasing.

B. Technical Infrastructure

1. Multi-tiered Environment

Generally, EAS systems run in one of the multi-tiered environments depicted in Exhibit III-2 on the following page. However, the introduction of enhanced Internet/Intranet support by EAS vendors has resulted in the "n-tiered" implementation of client/server applications becoming the option chosen by most customers.

Exhibit III-2: Client/Server Tiered Architecture



2. Software Instances

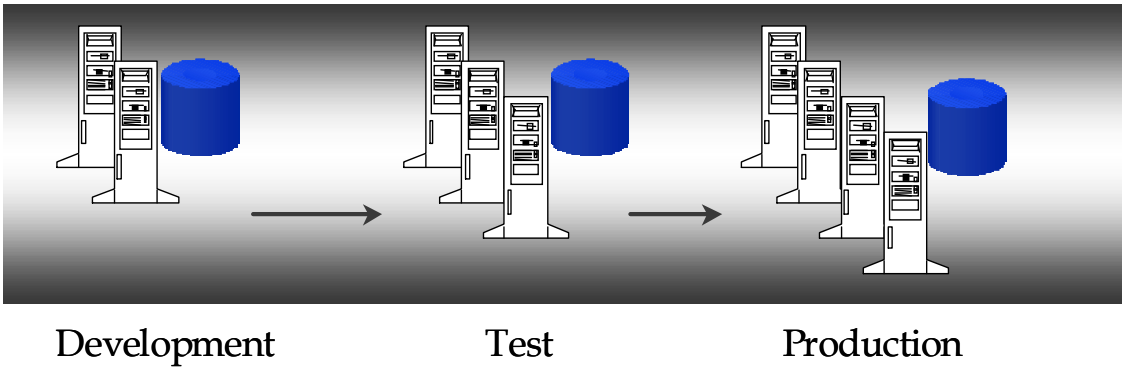
In a typical EAS, the technical environment will be made up of multiple *instances* of the EAS software running on multiple *systems*. These instances all run together in a system *landscape*. For purposes of clarity, an *instance* is defined as a group of resources such as memory, work processes, etc. EAS instances generally share a common set of buffers and are controlled by the same dispatcher process. A *system* is defined as a collection of one or more instances with a common database.

3. System Landscapes

A landscape is defined as a series of one or more EAS Systems needed throughout the development, test, production, and maintenance phases of an EAS implementation

project. For example, a simple EAS landscape may be implemented as illustrated in Exhibit III-3.

Exhibit III-3: System Landscape Example



A complex landscape designed to accommodate the needs of a large organization can contain many more systems. There may be several systems used for technical and functional development, and there may be several systems used for testing and training. Finally, there may be several systems to support production. EAS systems are used as building blocks for an overall landscape.

4. Networking

Networking in most EAS systems is accomplished using TCP/IP network protocol. A robust wide-area network, which adequately serves all end user locations, is a key factor in a successful implementation of an EAS system.

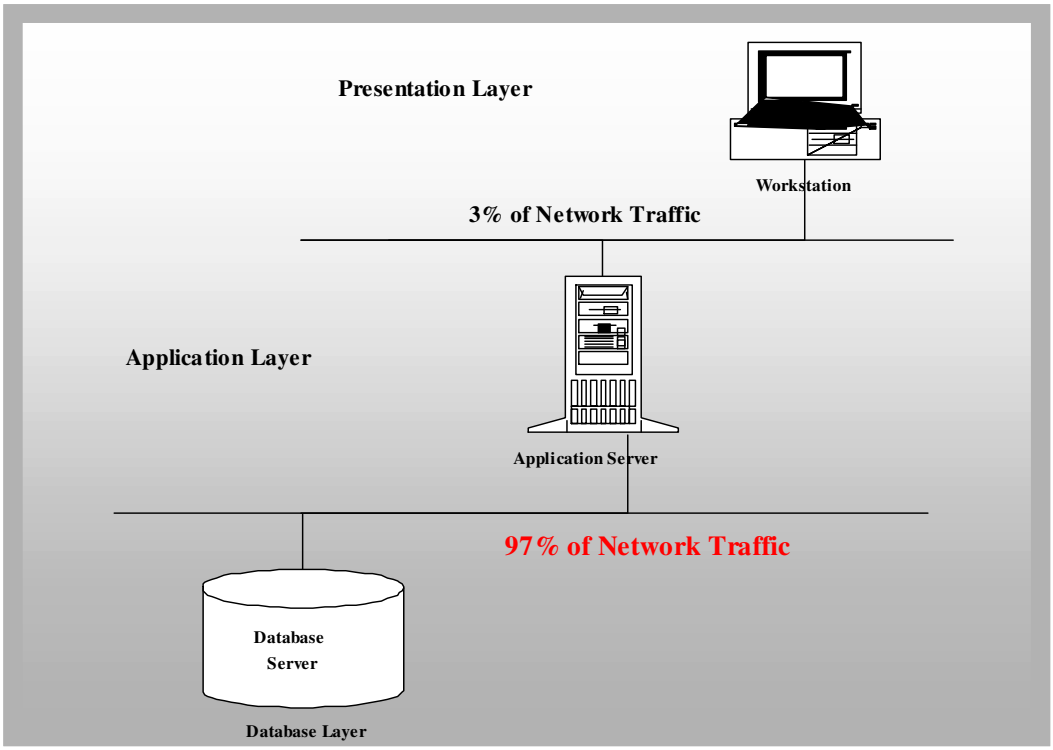
EAS systems provide end user access to the application in multiple ways. For example, some EAS vendors offer a proprietary GUI, which is generally recommended for "power users" or others who access the system on a daily basis. The proprietary GUI optimizes network performance and load. It is also required in some cases to provide the complete feature set of the EAS. However, the GUI requires a workstation configuration adequate for the task and in some cases must be maintained as part of the desktop software image.

For more casual users of the system (executives, and employees using employee self-service application), most EAS vendors offer access to the system with HTML using a standard browser like Netscape or Internet Explorer. The benefits of using HTML are obvious: No GUI software to maintain and common user interface using the Web. The bandwidth requirements for HTML are in most cases higher than that for the proprietary GUI and should be deployed prudently. Additionally, users may not be able to access all features of the software using HTML.

The other very important network requirement is that of a robust, high performance local area network over which the servers communicate. In a typical EAS system, the

data communication requirements between applications and database server are many times higher than from the Application server to the user workstation. Exhibit III-4 depicts typical bandwidth requirements between major components of an EAS.

Exhibit III-4: EAS Bandwidth Requirements Distribution



IV. Technical Component Requirements

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A. Overview

EAS systems are very comprehensive and highly flexible, and are delivered for a wide-variety of hardware and operating system platforms. EAS systems are client/server applications—where database services, applications services and presentation services run on separate devices. The platform independent nature of most EAS systems now makes it possible to run presentation as well as application and database services on different machines and operating systems.

B. Assessment of Current Resources

During October 2002, interviews were held with members of the HRISD and DIS organizations in order to ascertain the high-level IT architectural capabilities of the respective groups relative to their ability to support a possible future EAS system implementation. The following is a summary of our findings in each of the organizations analyzed.

1. HRISD IT Infrastructure

The HRISD IT Infrastructure is Microsoft–centric in an Intel-based server environment. The major applications utilize MS SQL Server for the database. There is one Oracle database, but the development and maintenance of this application is not supported by HRISD. HRISD IT maintains the Web-based and ancillary systems for statewide human resource information systems, such as the Data Warehouse and the Decision Support Data Mart. The data in these systems however, have their origins in the mainframe applications' databases housed in DIS.

HRISD systems are all attached to HRISD's LAN, which in turn attaches to the DIS data network, which serves all agencies using the HRISD systems. Agency workstations are running a mix of MS Windows 95/98/2000 and access to mainframe system is accomplished using the TN3270 terminal emulation software. All access for workstations is TCP/IP. Each agency is responsible for acquisition and configuration of its respective workstation software and hardware.

HRISD has begun to develop formal IT processes for key activities in the maintenance of its IT components. Insight Manager has been installed and is being used to monitor HRISD servers and end user workstations. However, the responsibility for workstation software deployment and performance remains with the respective agencies. A server backup process is in place using Veritas as the backup tool.

HRISD has developed a core organization responsible for the administration and operation of the infrastructure components, which are owned by HRISD. There is a formal help desk in place which functions as level 1 support for all of the agencies which use HRISD systems. Either HRISD development/data management groups or DIS, depending upon the nature of the problem, provide level 2/3 support.

2. DIS IT Infrastructure

The DIS IT Infrastructure is primarily mainframe-centric, having at its core large S/390 mainframes. The primary database software supported on the mainframe for HRISD applications is ADABAS. However, DIS has significant experience with IMS and most recently, is enlarging its portfolio with DB/2 skills—as a result of significant development in other agencies of State Government. DIS employs logical partitioning (LPAR) technology on the S/390 to provide for improved application separation and performance and is in the process of implementing high-availability using the S/390 Parallel Sysplex option.

The DIS IT Infrastructure also contains UNIX and NT components.

DIS is an IT processing utility and, as such, has developed and maintains very mature IT processes. Critical IT processes for Service Level Agreement and management, Backup/Recovery, change and problem management and disaster recovery are in place and are maintained on a regular basis. The technical staff is highly trained in the system administration of platforms supported including S/390 and UNIX. The Help Desk at DIS is accustomed to providing all levels of support, including levels 2/3.

DIS systems are supported by a robust set of systems' management software, including CA1 (tape management), CA7 (scheduling), and RACF (security).

3. HRISD/DIS IT Comparison

Based upon the analysis conducted so far, it would appear that the IT Infrastructure in DIS is far better equipped than HRISD to provide the key IT Infrastructure components required by an EAS. By design, the disciplines employed in DIS will allow it to adapt more easily to the challenges imposed in managing the technology components of an EAS.

C. Hardware and System Software Requirements

1. Platforms

Two hardware options have been identified for an EAS HRMS solution for the State of Washington; Mainframe and All UNIX. The Mainframe option utilizes a mainframe as the database server, the All UNIX option utilizes UNIX as the database server.

A complete mainframe option was considered. With this option, the mainframe would function as the application servers as well as the database server. However, industry research indicates that the typical platform configuration employing a mainframe to support an EAS HRMS assigns the database server to the mainframe and the application servers to either UNIX or NT2000 servers. The primary reason appears to be an anticipated lower cost of running the application servers on a platform other than the mainframe. Installations running the application servers on the mainframe are typically those that require ultra-high availability environments in a large parallel processor complex.

The proposed options are detailed below. Platforms are based on IBM products for illustration purposes only.

a. Mainframe

- S/390 (zSeries) Database Server
- UNIX (pSeries) Application Servers
- NT (xSeries) Network Servers
- 2105-F20 Enterprise Storage Server
- 3584-L32 Tape Library

b. All UNIX

- UNIX (pSeries) Database Server
- Failover Server
- UNIX (pSeries) Application Servers
- NT (xSeries) Network Servers
- 2105-F20 Enterprise Storage Server
- 3584-L32 Tape Library

2. Platform Sizing Assumptions

- The production EAS environment will be a centralized system with servers located in a single data center.
- A user-based sizing approach will provide sufficient estimates for the purposes of this study. It is recommended, however, that the EAS implementation team conduct business transaction-based sizing exercises to further refine this estimate.

- User quantification for hardware sizing is as follows:
  - 1,700 low volume users
  - 1,000 medium volume users
  - 247 high volume Employee Self Service (ESS) users

    For the ESS users, it was assumed that during the peak period there would be 56,000 possible users, executing 5 enter key transactions or less per transaction. Formula employed to determine the high volume ESS users: (56,000 users – 2700 online users) * 5 step transaction = 266,500 / 10,800 (3 hours) = 24.67 * 10 (high workload user) = 246.7 users.

3. Sizing Results

Exhibit IV-1 illustrates the results of the hardware sizing task. Sizing based on IBM products for illustration purposes only.

Exhibit IV-1: Sizing by Option

System	Server Function	Model/Nomenclature	Mem[1]	DB[1]
Mainframe Option				
Production[2]	Database Server	71% of (1) z800 2066-0A2 running at 90% CPU utilization with 10% LPAR overhead I/O Rate = 1,640 per second	3	500
Production	Application Servers	(3) P660 6h1, 750 MHz, 2-way	14	
Production	Internet Trans. Servers	(15) x360, 1.6 GHz, 2-ways	2	
Sandbox	Application Server	(1) p630 6C4, 1GHz, 2-way	2	
Development	Application Server	(1) p630 6C4, 1GHz, 2-way	3	
QA	Application Server	(1) p630 6C4, 1GHz, 2-way	3	
All UNIX Option				
Production[2]	Database Server	(1) P660 6H1, 750 MHz, 4-way	12	500
Production	Application/Failover	(1) P660 6H1, 750 MHz, 4-way	14	
Production	Application Servers	(2) P660 6H1, 750 MHz, 2-way	14	
Production	Internet Trans. Servers	(15) x360, 1.6 GHz, 2-ways	2	
Sandbox	Central Server	(1) p630 6C4, 1GHz, 2-way	2	
Development	Central Server	(1) p630 6C4, 1GHz, 2-way	3	
QA	Central Server	(1) p630 6C4, 1GHz, 2-way	3	

[1] Mem – Memory in gigabytes, DB – Database in gigabytes
[2] Plus non-production

4. Configuration Results

Exhibit IV-2 and IV-3 beginning on the next page, provide graphical displays of the hardware configuration for each option. Configurations are based on IBM products for illustration purposes only.

Exhibit IV-2: Mainframe Option

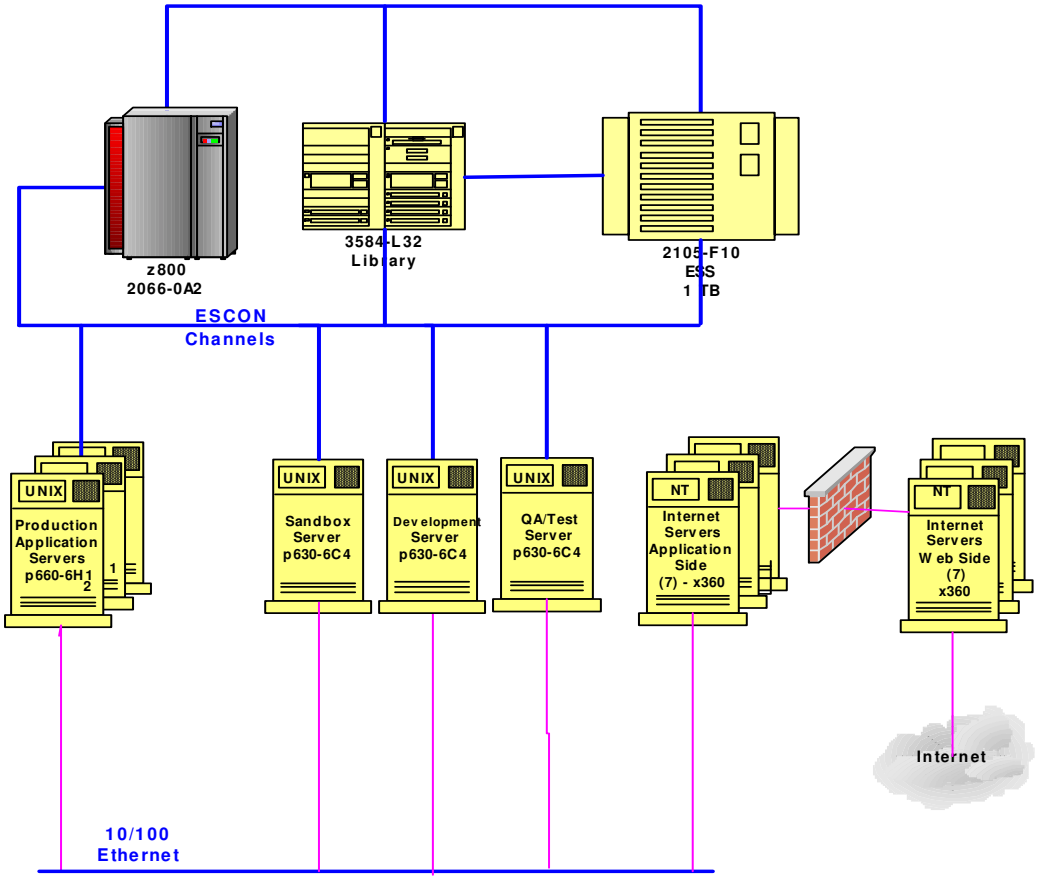
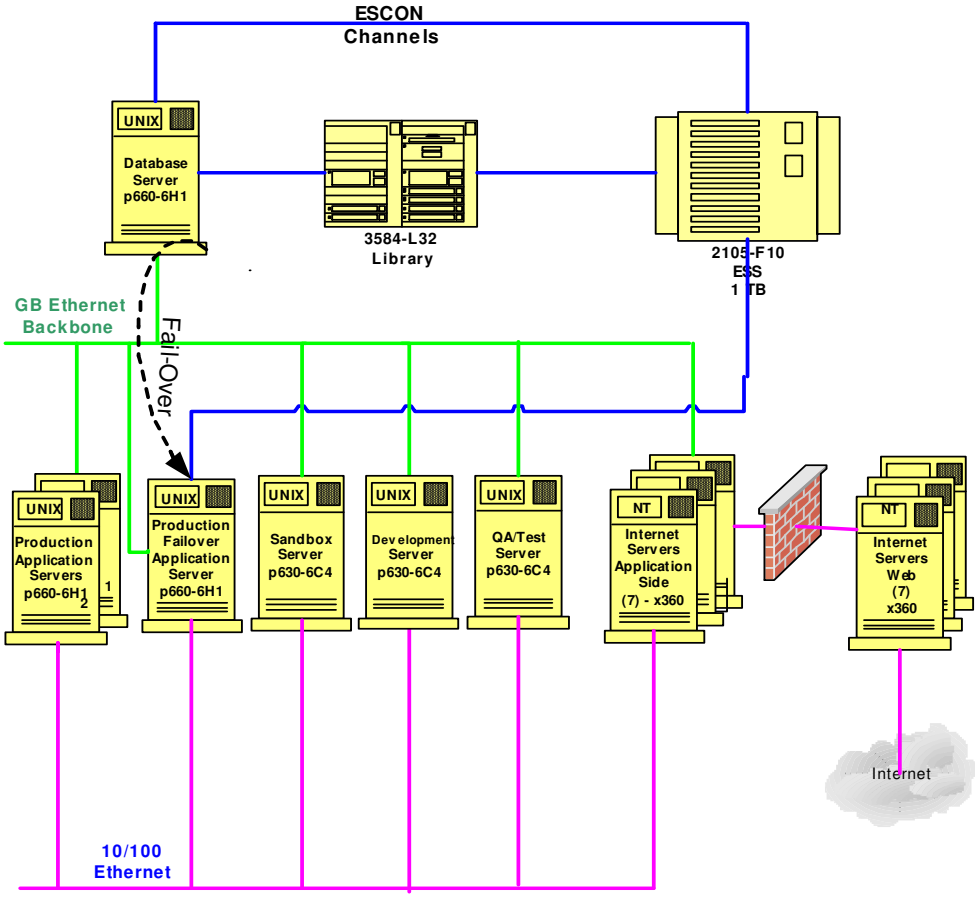


Exhibit IV-3: All UNIX Option



5. System Software Components

System software components based on IBM products for illustration purposes only.

a. Operating System

(1) Mainframe (S/390)

O/S 390 version 2.8; DB2/390 Version 6 and ESCON or OSA2 capability. In addition, DFSMS Sort and RACF are required.

(2) pSeries Servers

UNIX-AIX V5.1, HACMP. In addition, backup software such as Tivoli SMS or other tape back software is recommended.

b. Database Management

DB/2 is recommended for all solutions unless an Oracle EAS HRMS is selected, in which case it would be necessary to use the Oracle database.

D. Middleware

At this point in the analysis and design of a technical infrastructure to support an EAS HRMS system at the State of Washington, it is unclear what new middleware components might be required, although it is understood that approximately 225 existing interfaces would need to be supported.

At a minimum, the State of Washington should plan to leverage the current investment in products such as MQSeries. The popular messaging products (MQSeries) and Integration software (CrossWorlds) now have "plug-ins" to provide access to interface file types which have been developed as standards by the respective EAS vendors. This does not eliminate development efforts on the legacy side, but can save considerable time if the standard interfaces can be utilized in the EAS. These products also stay in synchronization with the EAS vendor as interfaces change or as new interface types are established, thereby eliminating system maintenance and upgrade problems in the messaging area.

E. Workstations

Most EAS vendors provide a proprietary GUI which runs on the end user's workstation. In order to realize the highest levels of network efficiency and EAS functionality, it is highly recommended that day-to-day ("heads-down") users of the system use the GUI for EAS access.

Current printers and workstations have not been evaluated to determine whether they are sufficient to support an EAS system. Based upon the requirements for generic EAS HRMS systems, workstation requirements and recommendations have been developed and are displayed in Exhibit IV-4. This workstation configuration will run most all EAS GUI software. Employees accessing the application through the Internet, i.e., those employees utilizing ESS and/or accessing the system on less than an "all day, every day" basis, only need a workstation capable of launching a browser.

Exhibit IV-4: Workstation Configuration

Description	Recommendation
Workstation Configuration	Win2000
CPU Minimum	P200+
CPU Recommended	P200+
Memory Minimum	64MB

Description	Recommendation
Memory Recommended	96MB
Hard Disk	50MB server, 280MB local
Display Minimum	17” 1024x768, 256 color
Display Recommended	17” 1024x768, 32k color

F. Network Components

It is assumed that current network capacity will be adequate to support an EAS initiative.

V. Organizational Impact

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A. Production and Support Processes

The State of Washington must address various IT infrastructure processes to ensure a successful EAS HRMS implementation. Some process areas in the IT infrastructure are more mature than others. For example, Disaster Recovery and Change Management are mature IT processes, and should be used as models for new process areas.

1. Backup and Recovery

- Develop backup and recovery, which include a periodic testing schedule against all possible data loss scenarios envisioned by functional personnel. Exploit the features of Electronic Storage Subsystems Copy Services, where possible, in conjunction with EAS requirements and service level objectives.
- Establish maintenance and offline backup windows for database reorganization and offline backups for production servers.
- Implement backup strategy for NT servers.

2. EAS Change Management

- Adapt current change management process to accommodate EAS transports across landscapes, combining technical, functional, and business representatives for key approvals of major changes that may affect the production environment.
- Establish a formal EAS change management process for the steady state environment.
- Adapt Infoman, the current DIS change management tool, as the vehicle for managing EAS change management as soon as practical to provide centralized tracking and notification of changes and provide a clear audit trail of approvals.

3. Help Desk

- Develop help desk procedures, which are closely integrated with Change Management and Problem Management procedures. All three procedures use the Infoman tool and, therefore, cause and effect relationships can be determined.

- Establish Help Desk process and procedures for prioritization, call outs, and escalation.
- Establish roles and responsibilities for each level of EAS support. Each support level should establish documented Service Level Agreements (SLAs).

4. EAS Application Security

- Consider a central administration tool for EAS Application Security implementation and administration.
- Ensure that proper knowledge transfer is executed for steady state support.
- Determine security methods and associated components for the EAS (LDAP, SSO, Digital Certificates, SSL, etc.) and adjust related planning and architecture to accommodate.
- Begin detailed planning for infrastructure level security surrounding the Internet. It is important to start this planning early, as it often requires the collaboration of corporate standards, 3rd party security components, firewall and network architecture, etc.

5. Output Management

- Establish output management software requirements (ASCII printing, front-end printing, facsimile).
- Define comprehensive output management test procedures.
- Establish single points of contact within end user departments to manage respective printers.
- Establish escalation and callout procedure for critical print jobs and critical printers.
- Establish comprehensive printer test plan to test every output type identified.

6. Service Level Agreements

DIS presently negotiates SLAs with its customers. The current SLA, once modified to reflect EAS metrics, should be adequate to meet users' requirements, assuming that the SLAs reflect quantifiable and measurable performance elements, which can vary in complexity from existing measurement and reporting. Suggestions for modification of the SLAs include:

- Using the present SLAs as a guide, establish formal SLAs covering all platforms and servers used in the EAS HRMS implementation (NT and AIX servers, web servers, integration server and EAS HRMS servers).

- Modify formal EAS HRMS metrics to reflect the performance expectations and measurable metrics of the EAS HRMS such as availability, response time, and batch performance.
- Update formal EAS HRMS production maintenance and backup windows. This is very important considering the large data volumes and software maintenance requirements of an EAS HRMS.
- Establish formal responsibilities for monitoring and managing SLA's.

B. New Skill Sets Needed

A variety of talents, skills, job roles and training are required to successfully build and maintain the infrastructure for an EAS system. There are many critical IT activities that must be managed during design, implementation, and production phases of the project that require specialized skills in the underlying platform technology as well as the special technical intricacies of the specific EAS product itself.

1. EAS System (Kernel) Administration

In an EAS environment, there are specialized functions at the system level which are required to support the configurable software of the EAS application. For example, SAP's architecture is made up of the Basis Component, or SAP Kernel, which provides the technology layer between the operating system and the application; PeopleSoft utilizes a technology set called PeopleTools, which is less proprietary than SAP's Basis Component, but is still required to maintain performance of the PeopleSoft application. Both of these "kernel-related" components require highly trained technical specialists to administer them. Using the facilities of these kernel components, the Kernel Administrator will provide for regular EAS backup, provide for data recovery mechanisms, grant users logins to the EAS system, and monitor and file usage. In addition, the EAS System Administrator will monitor spool, job scheduling, and configuration of new EAS servers. Finally, the EAS System Administrator provides problem resolution to the Help Desk, monitors database table and indexes via specialized EAS technology monitoring software, and schedules database alterations with the Database Administrator (DBA). The EAS System Administrator will also serve as an EAS expert to the IT team.

The candidate for this position can be an existing staff member, preferably someone with existing experience in the administration of the underlying platform, such as UNIX or OS/390. During the early stages of the project, the identified individuals should attend technical training provided by the EAS vendor and then continue to learn by skills transfer from the integrator during the project implementation phases.

2. Operating System Administration

The primary responsibility of the Operating System Administrator is the maintenance and administration of the underlying operating system(s), which support the EAS. These operating systems include IBM S/390, UNIX and NT. The Operating System Administrator provides support of the EAS infrastructure by performing all functions that require system-level privileges on the EAS system. This position provides infrastructure support of all tools that ship with underlying systems, such as compilers, debuggers, mailers, etc. The Operating System Administrator is responsible for maintaining the servers in accordance with site security standards, and for monitoring system performance and performing OS level backups of the system. The Operating System Administrator teams with the EAS Systems Administrator and the Database Administrator for system tuning. Finally, the Operating System Administrator provides problem resolution to the help desk.

3. Database Administrator

The DBA is responsible for implementation and maintenance of the underlying database of the EAS. In the case of most EAS systems, there are several database options to choose from. The most common EAS databases are Oracle, Informix, SQL Server and DB2. Other DBA responsibilities are to ensure appropriate tuning of the database structures to optimize EAS performance, to develop and maintain processes to continually ensure data integrity and recoverability and to deliver expertise in the support and trouble-shooting of database level problems. The DBA will integrate non-EAS database dependent products (bolt-ons) and ensure compatibility between applications and operating systems with the database software and utilities. The DBA will also provide reorganizations of the database when necessary and assist in developing the disaster recovery plan.

Depending on the database that is chosen, additional database administration skills may need to be added to the staff. If Oracle or UDB is chosen in a UNIX environment, then these DBA skills will need to be acquired or developed. On the other hand, if the EAS database server runs on the mainframe, existing DB2 experienced staff should have no problem with database management requirements of the EAS. Additional staff to manage the database, if required, could be provided by retraining current staff responsible for the administration of ADABAS.

4. Other

In addition to the skills identified in this section, participation is required by the network administrators, help desk, and operations functions of the IT organization. IT process experts will need to modify or create the specialized IT processes and procedures required to implement and maintain the EAS technology environment.

It is assumed that current network, help desk, and operations staff are sufficient to absorb the additional workload of EAS once the replacement of current legacy applications is complete.

C. Project Staffing

1. Package Selection

The State is advised to acquire outside resources to assist in the RFP production and integrator/package software selection and acquisition process. Exhibit V-1 represents the estimate of consultant effort associated with this process.

Exhibit V-1: Integrator/Package Selection Staffing

Description	FTE's
Project Management	1.00
Package Selection Consultant	0.75
Change Management Consultant	0.50
Total:	**2.25**

a. Consultant Staffing

(1) Project Management

The Project Manager will provide project leadership and direction. Tasks that may be performed include:

- Develop team work plans.
- Lead deliverables reviews.
- Coordinate and assign team activities and tasks.
- Coordinate cross team communication and tracking of team's tasks to completion.
- Coordinate problem resolution.
- Assist in leading Status Meetings.

(2) Package Selection Consultant

Package Selection consultants are fully trained in package and integrator selection methodology and possess knowledge of Tier-One EAS HRMS

packages as well as an understanding of state government business processes. Anticipated tasks that will be performed include:

- Assist with requirements gathering workshops.
- Assist with 'to be' business process development.
- Conduct vendor analysis.
- Facilitate vendor demonstrations.
- Assist with the development and administration of the RFP.
- Analyze results of the demonstration scoring.

(3) Change Management Consultant

Change Management consultants are trained and experienced in Organizational Change Management theory and practice relating to the challenges of an EAS HRMS implementation. Anticipated tasks that will be performed include:

- Assist in developing a communications program.
- Assist with an Organizational Readiness Assessment.
- Work on the alignment of the project's vision and goals with the State's vision and goals.
- Assist with the development of a sponsorship program.
- Assist with the development of risk mitigation strategies.

2. Implementation Staffing

During Implementation Phase I, II and III of the EAS HRMS project, project management, change management, functional consulting, technical consulting, training and IT infrastructure consulting will be required to manage and execute the implementation in partnership with State of Washington staff and provide skills transfer to State employees. Exhibit V-2 represents the estimate of implementation project staffing required to implement the EAS HRMS across the three implementation phases.

Exhibit V-2: Implementation Staffing

Description	FTE's	Total FTE's
State of Washington:		
Project Management	1.0	
Functional Subject Matter Experts	15.0	

Description	FTE's	Total FTE's
IT Consultants	6.0	22.0
Integrator:		
Project Management	1.8	
Functional Consultants:		
–Payroll	1.6	
–Human Resources	1.6	
–Benefits	0.7	
–Change Management	1.6	
–Training	1.3	
IT Consultants	4.2	12.8
Total:		**34.8**

a. State of Washington Staffing

(1) Project Management

The Project Manager will provide leadership and direction in all functional areas. Tasks that may be performed include:

- Develop team work plans.
- Lead deliverables reviews.
- Coordinate and assign team activities and tasks.
- Coordinate cross team communication and tracking of team's tasks to completion.
- Coordinate problem resolution and assist in leading Status Meetings.

(2) Functional Subject Matter Experts

The State of Washington will provide fully trained functional analysts per software application with appropriate leadership attributes, business unit knowledge, and process knowledge of the existing State of Washington Human Resources, Benefits Administration Financials and Payroll systems, and external interfaces to other systems. Additionally, change management and training resources will be required. Tasks that may be performed include:

- Participate in the deliverables reviews as needed.
- Provide functional information about the existing application environment.

- Review data file information.
- Participate in application design via the future requirements and fit-gap analysis workshops.
- Assist in problem resolution.
- Participate in status meetings.
- Respond and obtain approval for functionality decisions resulting from participation in requirements, fit-gap analysis, and configuration workshops.
- Facilitate change management implementation.
- Coordinate training efforts.

(3) IT Consultants

The State of Washington will provide fully trained technical consultants to support the implementation of the selected EAS application. A variety of technical roles will be required, including:

- EAS System (Kernel) Administration.
- Operating System Administration.
- Database Administration.
- Technical Design and Development.
- EAS Architect.
- EAS Security.
- UNIX Server Management.

Tasks that may be performed include:

- Setup security.
- Test and design application definition.
- Participate in the deliverables reviews as needed.
- Provide technical information about the existing systems.
- Provide technical information on/about the existing application environment.
- Provide technical information about system interfaces.
- Provide data file information.
- Participate in application design.

- Develop technical specifications.
- Provide information about any third party systems as may be needed for specification creation.
- Code and test interfaces, conversions, adaptations, and modifications to the system.
- Provide infrastructure design and implementation services.
- Participate in status meetings.

b. Integrator Staffing

(1) Project Management

Project managers have appropriate leadership attributes and are knowledgeable in the selected software and/or package selection/change management methodology. (Project Management also includes resources for Executive Management and Project Administration.) Anticipated tasks that will be performed include:

- Lead deliverables reviews.
- Coordinate and assign team activities and tasks.
- Coordinate cross team communication and tracking of team's tasks to completion.
- Coordinate application design via the future requirements and fit-gap analysis workshops.
- Coordinate problem resolution.
- Assist in leading status meetings.
- Responsible for the integrator/State of Washington relationship.

(2) Functional Consultants

- Payroll Consultants

  Payroll consultants are fully trained functional analysts that are knowledgeable and experienced in the selected software application and in State-wide EAS Payroll implementations. Anticipated tasks that will be performed include:

  - Identify future business strategy.
  - Develop implementation strategy.

- Determine package fit/gap.
- Design/confirm configuration standards.
- Develop baseline configuration.
- Perform integration testing.
- Assist with User Acceptance testing.
- Support production cut-over.
- Provide post-implementation support.

- Human Resource Consultants

  Human Resource consultants are fully trained functional analysts that are knowledgeable and experienced in the selected software application and in State-wide EAS Human Resource implementations. Anticipated tasks that will be performed include:

  - Identify future business strategy.
  - Develop implementation strategy.
  - Determine package fit/gap.
  - Design/confirm configuration standards.
  - Develop baseline configuration.
  - Perform integration testing.
  - Assist with User Acceptance testing.
  - Support production cut-over.
  - Provide post-implementation support.

- Benefits Consultants

  Benefits consultants are fully trained functional analysts that are knowledgeable and experienced in the selected software application and in State-wide EAS Benefits implementations. Anticipated tasks that will be performed include:

  - Identify future business strategy.
  - Develop implementation strategy.
  - Determine package fit/gap.

- Design/confirm configuration standards.
- Develop baseline configuration.
- Perform integration testing.
- Assist with User Acceptance testing.
- Support production cut-over.
- Provide post-implementation support.

- Change Management Consultants

  Change Management consultants are trained and experienced in Organizational Change Management theory and practice relating to the challenges of a large-scale EAS HRMS implementation. Anticipated tasks that will be performed include:

  - Assist in supporting the communications program.
  - Develop Change Management/Transition Management Strategy.
  - Assist with the development of risk mitigation strategies.
  - Rate organizational performance against critical success factors.
  - Identify and implement Change Leadership Program.
  - Conduct Change Leadership training.
  - Assess the alignment of the project's vision and goals with the State's vision and goals.
  - Plan and conduct organization transition program.

- Training Consultants

  Training consultants are trained and experienced in the development of training strategies and materials relating to the training needs of a large-scale EAS HRMS implementation. Anticipated tasks that will be performed include:

  - Develop Core Team training strategy.
  - Develop deployment education and training plan.
  - Develop deployment education materials.
  - Plan end-user training materials.
  - Conduct end-user training using 'train the trainer' approach.

(3) IT Consultants

IT consultants will be fully trained (application and database) technical specialists and programmers. Anticipated tasks that will be performed include:

- Assist with security setup.
- Assist with application definition testing and design.
- Participate in the deliverables reviews as needed.
- Collect and analyze technical information about the existing systems.
- Collect and analyze technical information on/about the existing application environment.
- Collect and analyze technical information about system interfaces.
- Collect and analyze data file information.
- Participate in application design.
- Develop technical specifications.
- Collect and analyze information about any third party systems as may be needed for specification creation.
- Code and test interfaces, conversions, adaptations, and modifications to the system.
- Provide infrastructure design and implementation services.
- Participate in status meetings.

D. Ongoing Technical Support Staffing

Exhibit V-3 represents the estimated effort to manage the IT EAS HRMS technology in a steady-state production environment. This estimate was derived using a synthesis of several staffing models, including IBM Outsourcing and a model developed by the IBM IT Infrastructure Consulting Practice. The values herein are estimates based upon the server population, user counts, and operating system complexity. These values are offered for purposes of estimating the level of effort required. Actual headcount requirements may vary based upon separation of duties, organizational, culture, and actual workload experienced in a post-EAS implementation environment.

Exhibit V-3: Ongoing Technical Support Staffing

Steady State Labor	Year 1	Year 2	Year 3	Year 4	Year 5
Performance Management	0.19	0.18	0.18	0.17	0.16
Capacity Management	0.05	0.05	0.04	0.04	0.04
Operations	1.79	1.70	1.61	1.53	1.45
Unix Server Management	0.78	0.74	0.70	0.67	0.63
NT Server Management	0.58	0.55	0.53	0.50	0.47
EAS Architects	0.02	0.02	0.02	0.02	0.02
EAS Kernel and Admin	1.31	1.25	1.19	1.13	1.07
DBA	0.53	0.50	0.47	0.45	0.43
EAS Security	0.95	0.90	0.85	0.81	0.77
System Mgmt and Automation	0.38	0.36	0.34	0.32	0.31
Storage Management	0.46	0.43	0.41	0.39	0.37
Asset Management	0.06	0.06	0.05	0.05	0.05
Resource Management	0.37	0.35	0.34	0.32	0.30
Total:	**7.46**	**7.09**	**6.74**	**6.40**	**6.08**

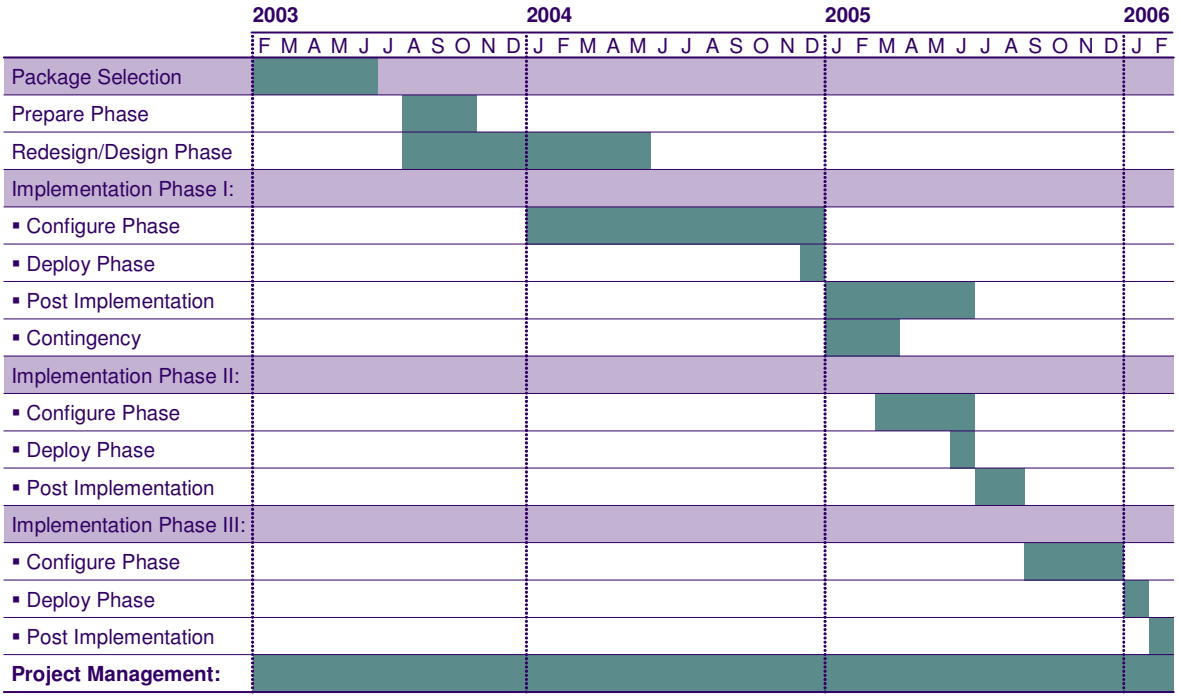
VI. Estimated Schedule

■

A. Project Timeline

The estimated timeline for Alternative 2 is illustrated in Exhibit VI-1.

Exhibit VI-1: Project Timeline



B. Activities

1. Package Selection

During the Package Selection phase, a software vendor and integrator will be selected based on the State of Washington's functional and technical requirements. In addition, Organizational Change Management consultants will begin to assist the State with a communications program, alignment of the project's vision and goals with the State's vision and goals, development of a sponsorship program, and risk mitigation strategies.

2. Prepare

The purpose of the Prepare phase is to understand and assess business strategy, critical processes, readiness for change, and the current information technology infrastructure and application portfolio, and to define strategies needed to implement the EAS.

3. Redesign/Design

During this phase of the project, the State will be assisted to leverage the selected EAS package by redesigning business processes and organization to align with the functionality to be implemented as part of Implementation Phase I and Implementation Phase II. The package-based solution and information technology infrastructures necessary to support the organizations will be designed. Basic package knowledge will be provided to the State's project team. Future business processes, the future business organization, and the design of the package solution will be documented.

4. Configure

The purpose of the Configure implementation phase is to develop, integrate, and test the final packaged application configuration as specified in the Redesign/Design phase. Training materials and documentation are also created for use in training and testing sessions, which are also a part of this phase. Separate Configure phases are planned for Implementation Phase I and Implementation Phase II.

5. Deploy

The Deploy implementation phase is for the purpose of moving the system into production and providing implementation and post-production support in compliance with the implementation strategy. Separate Deploy phases are planned for Implementation Phase I and Implementation Phase II.

6. Post-Implementation

The Post-Implementation implementation phase will provide assistance to the State in resolving issues or problems that occur during the post-implementation period. Separate Post-Implementation phases are planned for Implementation Phase I and Implementation Phase II.

VII. Estimated Costs – Phase I

■

A. Software

An EAS HRMS is composed of HR, Personnel, Payroll, Benefits Administration, and various functionalities enabling various self-service capabilities. Some EAS vendors sell their EAS HRMS offering as a single package, while others will sell it module by module. For cost estimating purposes, it has been assumed the State will acquire a full HRMS software suite.

Until the State selects a specific EAS software package and engages in final pricing negotiations, it is not possible to provide a high level estimate of what a Tier-One EAS HRMS software package would cost. Final pricing from the vendor can vary substantially based on a variety of factors including: market conditions; the timing and the vendor's perception as to whether they are willing to 'partner' with the potential client on further development opportunities; whether the client is willing to participate in a reference program; whether there are additional sales opportunities with the client, etc.

Considering the above, it appears that the most reasonable estimate for software is in the $5 million dollar range.

B. Package Selection Staffing

Package selection staffing costs consist of the services of an outside consultant to assist the State of Washington with this task.

Package selection staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e., the State of Washington or the Integrator. The assumptions employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.
- Contractor rates include expenses.
- All functional project staffing is based on $50,000 salary plus 30 percent benefits.
- Project management is estimated at double the staffing rate.

The estimated package selection staffing costs are displayed in Exhibit VII-1.

Exhibit VII-1: Estimated Package Selection Staffing Costs

Category	FTE's	Rate$[1]	Hours	Total$
State of Washington:				
Project Manager	1	62.50	867	54,200
Integrator:				
Project Management	1	200	900	180,000
Package Selection Consultant	.75	200	650	130,000
Change Management Consultant	.50	200	450	90,000
Travel Expenses@15%				60,000
Total:				**514,200**

[1] Blended rate

C. Project Staffing

Project staffing costs include the external integrator and travel expenses, internal technical personnel, and internal functional personnel. Integrator costs include interface development and current/historical data conversion. Cost estimates are based upon prior package implementation experience. It has been estimated that overall, 13% of the total integrator's hours will be for developing interfaces and 14% will be for data conversion; however, once detailed interface and data conversion requirements are finalized, these estimates may require modification.

Project staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e., the State of Washington or the Integrator. The assumptions employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.
- Contractor rates include expenses.
- All functional project staffing is based on $50,000 salary plus 30% benefits.
- Project management is estimated at double the staffing rate.

The estimated project staffing costs are displayed in Exhibit VII-2.

Exhibit VII-2: Project Staffing Costs

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
State of Washington:					
Project Management	1	62.50	3,360	210,000	
Functional Subject Matter Experts	15.9	31.25	53,840	1,682,500	
IT Consultants – Lead	1	125.00	3,360	420,000	
IT Consultants – Staff	5	95.00	16,800	1,596,000	3,908,500
Integrator:					
Project Management	2	175.00	7,040	1,232,000	
Functional Consultants:					
–Payroll	2	175.00	6,840	1,197,000	
–Human Resources	2	175.00	6,840	1,197,000	
–Benefits	.6	175.00	2,160	378,000	
–Change Management	1.7	175.00	5,800	1,015,000	
–Training	1.5	175.00	5,120	896,000	
IT Consultants	5.1	175.00	17,790	3,113,250	
Travel Expenses@15%	n/a	n/a	n/a	1,354,237	10,382,487
Total:					**14,290,987**

[1] Blended rate

D. External Quality Assurance

The estimated external quality assurance costs are displayed in Exhibit VII-3.

Exhibit VII-3: Estimated External Quality Assurance Costs

Category	Basis	Rate$	Hours	Cost$
QA Director	1	215	2,250	483,750
QA Functional Resource	1	140	1,125	157,500
QA Technical Resource	1	125	1,125	140,625
Travel Expense@15%	n/a	n/a	n/a	117,281
Total:				**899,156**

E. Facilities

Facilities costs are those costs associated with housing a maximum of 45 temporary project personnel at any given time over the project's lifecycle. The estimated facilities costs are displayed in Exhibit VII-4.

Exhibit VII-4: Estimated Facilities Costs

Description	Basis	Cost$	Total$
Office Space	5250/sqft/20 mo.	20/sqft/yr.	175,000
Desks and Chairs	38 sets	377	16,970
Telephones	38	100	3,800
Telephone Service	Package Selection – 3/7 mo. Implementation – 45/17 mo. Post-Implementation – 3/3 mo.	36/mo.	28,620
Miscellaneous Supplies	n/a	n/a	4,000
Total:			**228,390**

F. Equipment

The equipment costs include desktops for project staff, as well as the necessary network equipment and data line necessary to connect the desktops to the HRISD Local Area Network. The estimated equipment costs are displayed in Exhibit VII-5.

Exhibit VII-5: Estimated Equipment Costs

Description	Basis	Cost$	Total$
Desktops with GUI	45	2,000	90,000
Network Router	1	8,000	8,000
Network Switch	2	5,000	10,000
T1 Communications Link	20 mos.	1,000/mo.	20,000
Miscellaneous Network Equipment	n/a	n/a	2,000
Total:			**130,000**

G. DIS Charges

DIS change costs consist of additional demand for data storage and computer processing during the development period, and start-up costs for the development project. The start-up

costs include the hardware, database/middleware software, and staff training associated with the All UNIX option. High-level start-up cost estimates have been provided by DIS. The estimated DIS Charges are displayed in Exhibit VII-6.

Exhibit VII-6: Estimated DIS Charges Costs

Description	Basis	Cost$	Total$
Data storage and processing charges	18 mos.	15,000/mo.	270,000
Start-up Costs:			
Hardware			1,074,840
Database and Middleware			1,090,000
Operating System Training	3 people	9,000/person	9,000
Database Training	3 people	15,000/person	45,000
Total:			**2,506,840**

H. Operations

Operations costs are those associated with the post-implementation operation over a certain period of time. For the purposes of this study, the operational period has been designated as beginning in FY2004 for some costs, and running through FY2013.

Annual EAS HRMS software maintenance fees have been estimated at 20% of the EAS HRMS package purchase price. Software maintenance fees are due and payable upon the initial loading of the software and then on an annual basis thereafter, and provide access to the vendor's help lines and all patches, upgrades and accompanying increases in functionality developed by the vendor.

Major EAS HRMS software releases have been estimated to occur every three years. The release is provided under the EAS HRMS software maintenance contract. The State is expected to need external consultant support to assist it with major release implementations.

DIS charges include ongoing operation and support of the hardware and systems software, as well as charges associated with network connectivity, data storage and data back-up.

The estimated operational costs are displayed in Exhibit VII-7.

Exhibit VII-7: Estimated Operations Costs

Description	Basis	Cost$	Total$
EAS HRMS software maintenance	10 yrs.	1,000,000/yr.	10,000,000
EAS HRMS release consultants	Every 3 yrs.	1,000,000/yr.	3,000,000
DIS EAS HRMS support charges	10 yrs.	variable	18,002,707
Total:			**31,002,707**

VIII. Estimated Costs – Phase II

■

A. Project Staffing

Project staffing costs include the external integrator and travel expenses, internal technical personnel, and internal functional personnel. Integrator costs include interface development and current/historical data conversion. Cost estimates are based upon prior package implementation experience. Once detailed interface and data conversion; however, once detailed interface and data conversion requirements are finalized, these estimates may require modification.

Project staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e., the State of Washington or the Integrator. The assumptions employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.
- Contractor rates include expenses.
- All functional project staffing is based on $50,000 salary plus 30% benefits.
- Project management is estimated at double the staffing rate.

The estimated project staffing costs are displayed in Exhibit VIII-1.

Exhibit VIII-1: Project Staffing Costs

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
State of Washington:					
Project Management	1	62.50	1920	60,000	
Functional Subject Matter Experts	15	31.25	14,080	440,000	
IT Consultants – Lead	1	125	960	120,000	
IT Consultants – Staff	5	95	4,800	456,000	**1,076,000**
Integrator:					
Project Management	2.5	175	2,160	378,000	
Functional Consultants					
–Payroll	1.1	175	960	168,000	
–Human Resources	1.1	175	960	168,000	

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
–Benefits	1.1	175	960	168,000	
–Change Management	2.2	175	1,920	336,000	
–Training	1.1	175	960	168,000	
IT Consultants	3.6	175	3,120	546,000	
Travel Expenses@15%	n/a	n/a	n/a	289,800	2,221,800
Total:					**3,297,800**

[1] Blended Rate

B. External Quality Assurance

The estimated external quality assurance costs for Phase II are based upon the Phase I estimate of $31,275 per month. Phase II spans 6 months with a one month overlap with Phase I. Therefore, the five months of external quality assurance for Phase II is estimated at $156,375. Travel expenses @ 15% are estimated at $23,456.

C. Facilities

Facilities costs are those costs associated with housing a maximum of 30 temporary project personnel at any given time over the project's lifecycle. Desks, chairs, and telephones were acquired in Phase I, limiting Phase II costs to office space, telephone service, and miscellaneous supplies. The estimated facilities costs are displayed in Exhibit VIII-2.

Exhibit VIII-2: Estimated Facilities Costs

Description	Basis	Cost$	Total$
Office Space	5250/sqft/5 mos.	20/sqft/yr.	43,750
Telephone Service	30@5 mos.	36/mo.	5,400
Miscellaneous Supplies	n/a	n/a	1,500
Total:			**50,650**

D. Equipment

Desktops and network equipment were acquired during Phase I. This limits equipment charges for Phase II to the charges for the data line connecting the desktops to the HRISD Local Area Network. The estimated equipment costs are displayed in Exhibit VIII-3.

Exhibit VIII-3: Estimated Equipment Costs

Description	Basis	Cost$	Total$
T1 Communications Link	5 mos.	1,000/mo	5,000
Total:			**5,000**

E. DIS Charges

DIS change costs are those associated with the additional demand for data storage and computer processing during the development period. The estimated DIS changes are displayed in Exhibit VIII-4.

Exhibit VIII-4: Estimated DIS Charges Costs

Description	Basis	Cost$	Total$
Processing charges	5 mos.	15,000/mo.	75,000
Total:			**75,000**

IX. Estimated Costs – Phase III

■

A. Project Staffing

Project staffing costs include the external integrator and travel expenses, internal technical personnel, and internal functional personnel. Integrator costs include interface development and data conversion. Cost estimates are based upon prior package implementation experience. Once detailed interface data conversion; however, once detailed interface and data conversion requirements are finalized, these estimates may require modification.

Project staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e., the State of Washington or the Integrator. The assumptions employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.
- Contractor rates include expenses.
- All functional project staffing is based on $50,000 salary plus 30% benefits.
- Project management is estimated at double the staffing rate.

The estimated project staffing costs are displayed in Exhibit IX-1.

Exhibit IX-1: Project Staffing Costs

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
State of Washington:					
Project Management	1	62.50	1,040	65,000	
Functional Subject Matter Experts	12	31.25	12,480	390,000	
IT Consultants	6	31.25	6,240	195,000	**650,000**
Integrator:					
Project Management	.6	175	624	109,200	
Functional Consultants					
–Payroll	1.0	175	1,040	182,000	
–Human Resources	1.0	175	1,040	182,000	
–Benefits	.5	175	520	91,000	

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
–Change Management	1.0	175	1,040	182,000	
–Training	.9	175	960	168,000	
IT Consultants	1.5	175	1,560	273,000	
Travel Expenses@15%				178,080	1,365,280
Total:					**2,015,280**

[1] Blended Rate

B. Facilities

Facilities costs are those costs associated with housing a maximum of 30 temporary project personnel at any given time over the Phase's lifecycle. Desks, chairs and telephones were acquired in Phase I, limiting Phase III costs to office space, telephone service and miscellaneous supplies. The estimated facilities costs are displayed in Exhibit IX-2.

Exhibit IX-2: Estimated Facilities Costs

Description	Basis	Cost$	Total$
Office Space	5250/sqft/6 mos.	20/sqft/yr.	52,500
Telephone Service	30@6 mos.	36/mo.	6,480
Miscellaneous Supplies	n/a	n/a	1,500
Total:			**60,480**

C. Equipment

Desktops and network equipment were acquired during Phase I. This limits equipment charges for Phase III to the charges for the data line connecting the desktops to the HRISD Local Area Network. The estimated equipment costs are displayed in Exhibit IX-3.

Exhibit IX-3: Estimated Equipment Costs

Description	Basis	Cost$	Total$
T1 Communications Link	6 mos.	1,000/mo	6,000
Total:			**6,000**